

Albion K. P. Buffum's Machine for making Gutters for Buildings.

117255

PATENTED JUL 25 1871

Fig. 1.

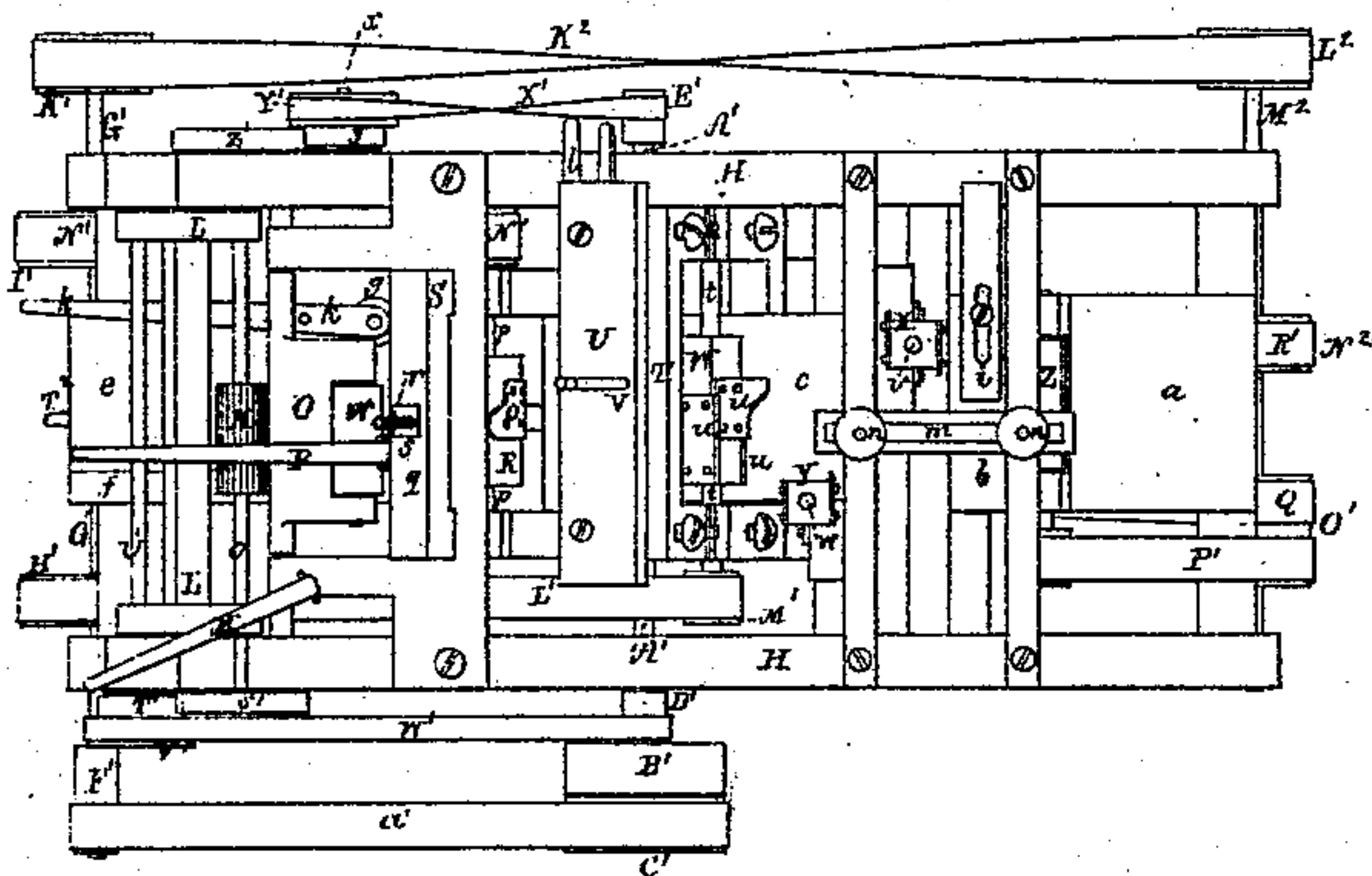


Fig. 2.

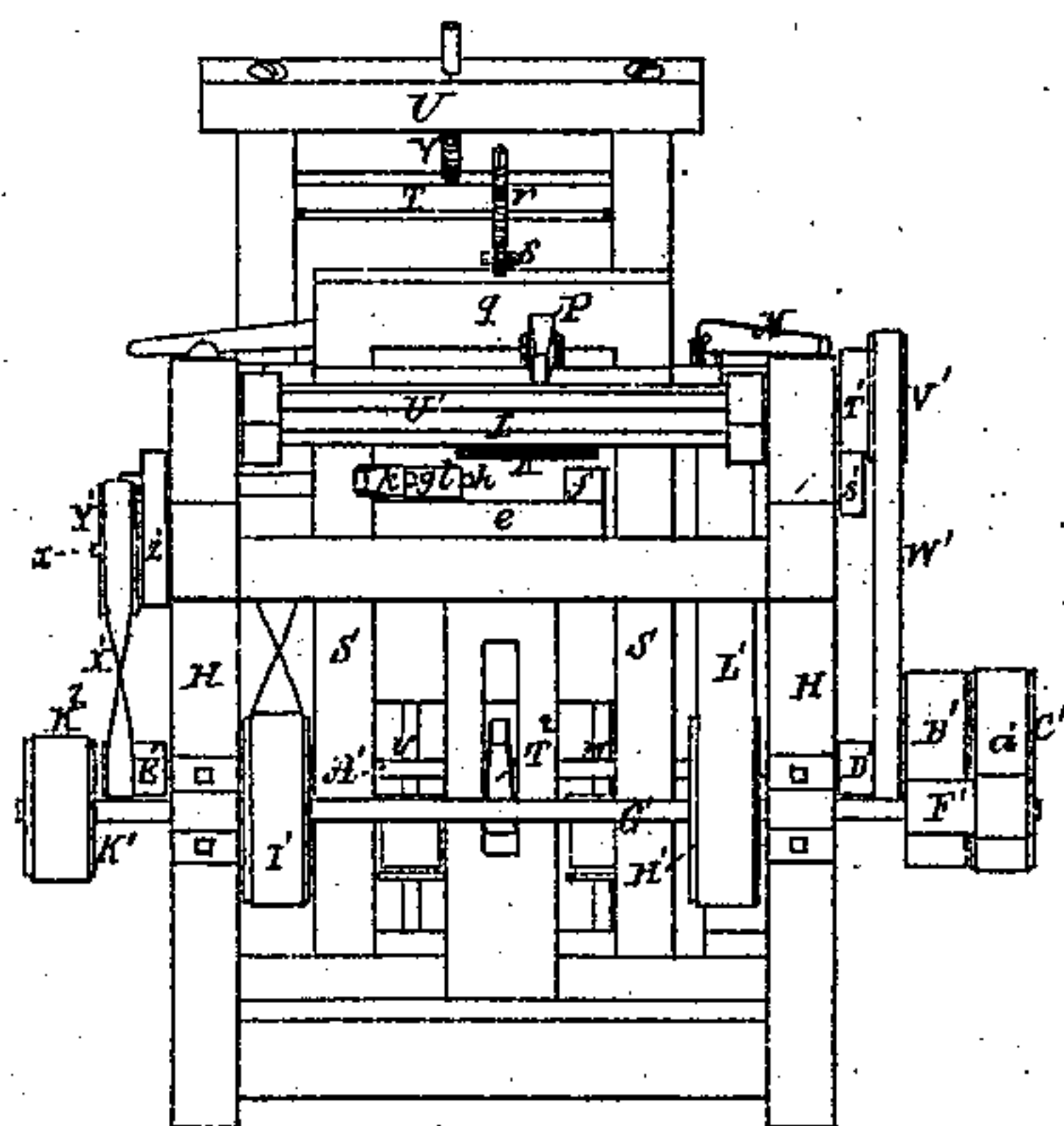


Fig. 3.

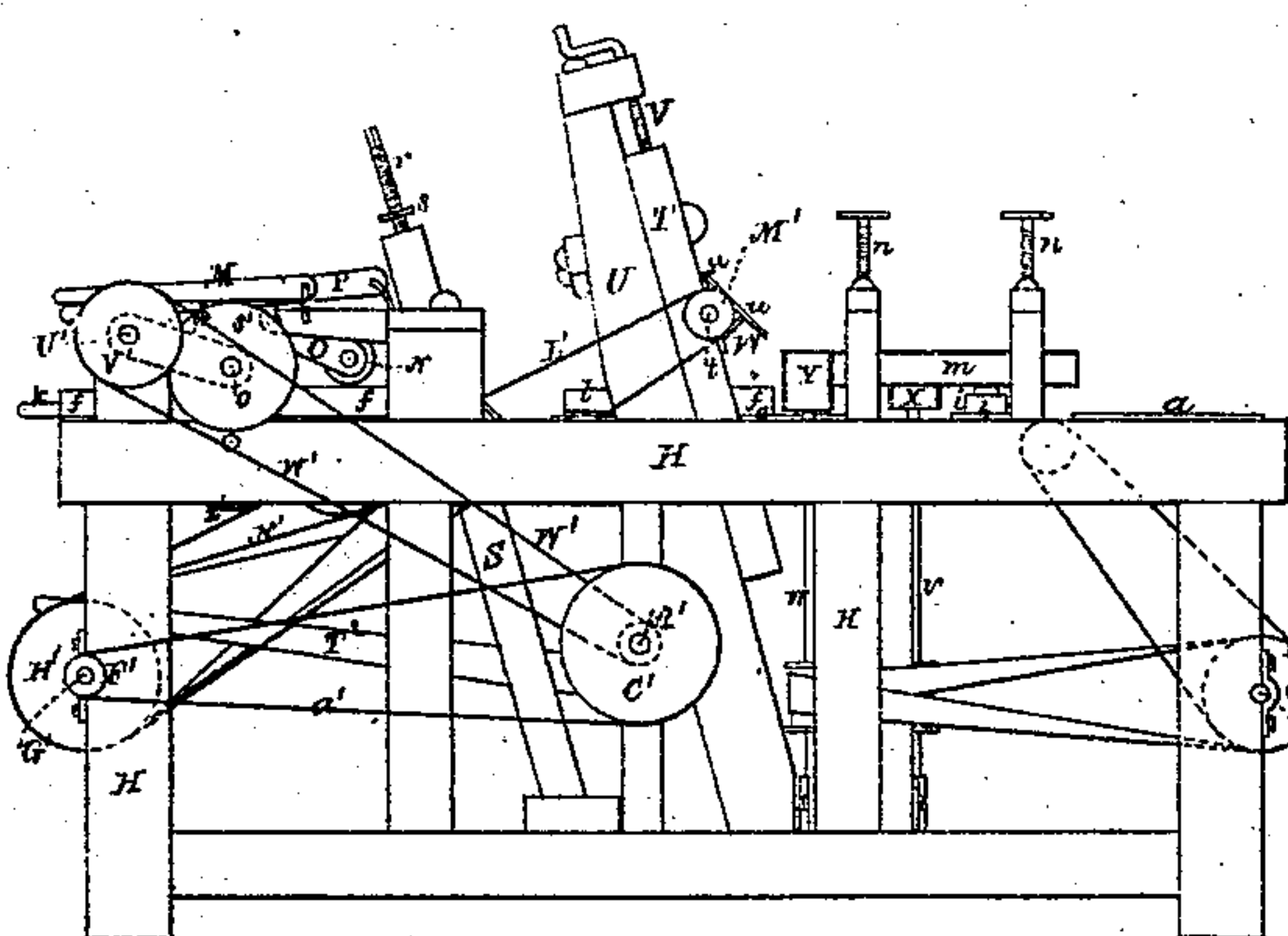


Fig. 4.

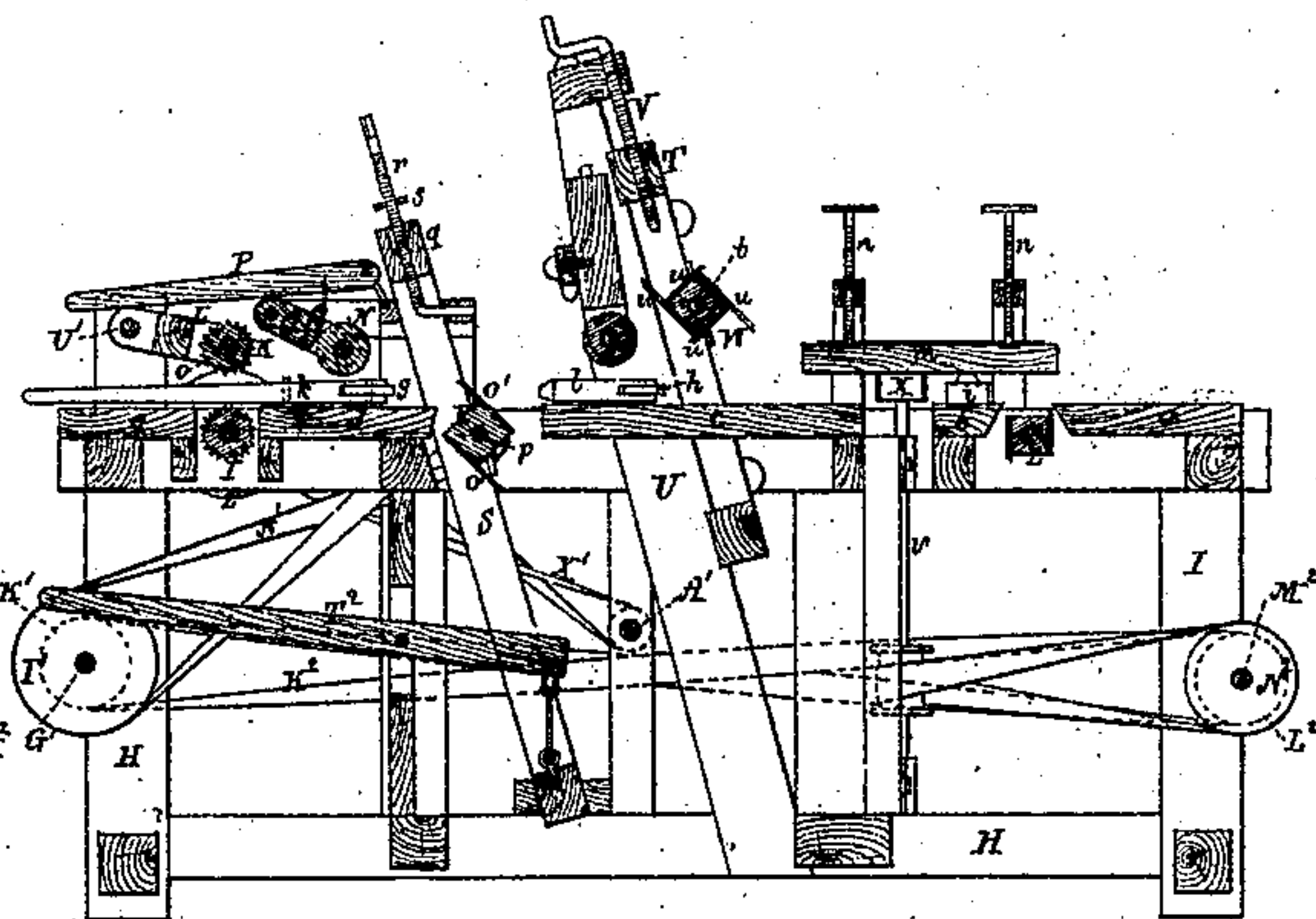
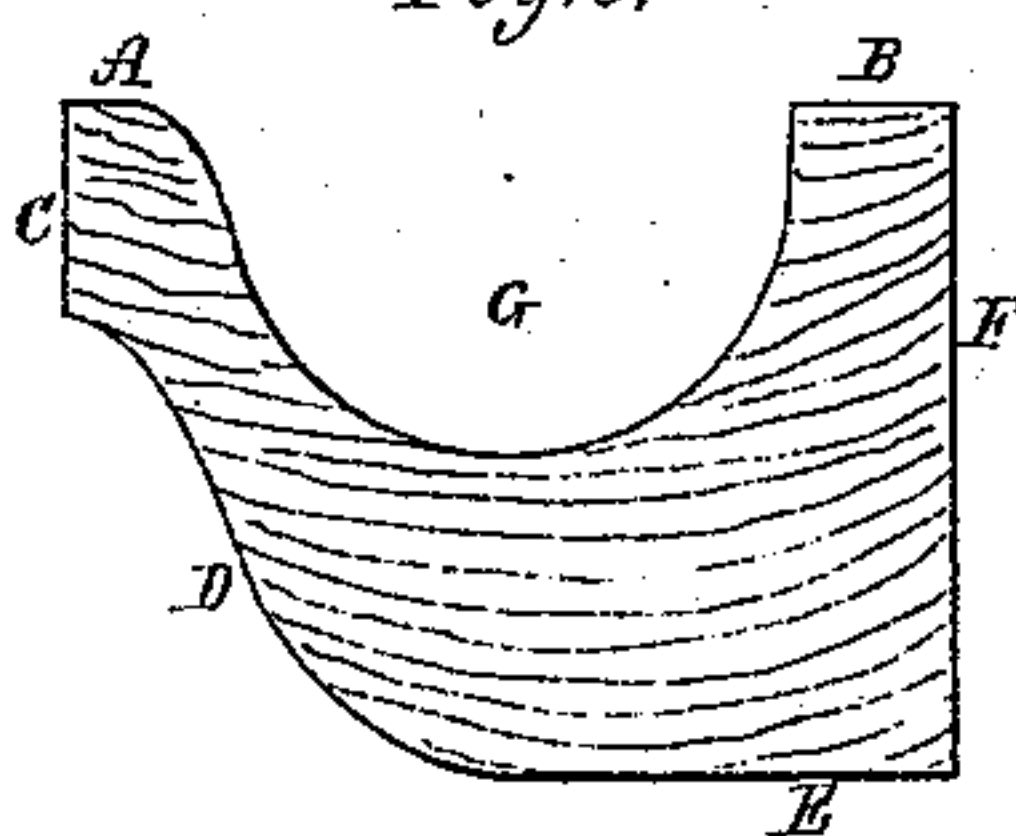


Fig. 5.



Witnesses:
S. N. Piper
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UNITED STATES PATENT OFFICE.

ALBION K. P. BUFFUM, OF GARDINER, MAINE.

IMPROVEMENT IN MACHINES FOR MAKING GUTTERS FOR BUILDINGS.

Specification forming part of Letters Patent No. 117,255, dated July 25, 1871.

To all whom it may concern:

Be it known that I, ALBION K. P. BUFFUM, of Gardiner, of the county of Kennebec and State of Maine, have invented a new and useful Machine for Making Gutters for Buildings; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view; Fig. 2, a rear-end elevation; Fig. 3, a side elevation; and Fig. 4, a vertical and longitudinal section of such machine. Fig. 5 is a transverse section of a gutter as made by it.

The nature of my invention consists in the construction of a machine for making wooden gutters for buildings by a combination and arrangement of devices in the manner hereinafter more particularly set forth, for subjecting a stick of timber to the operation of a series of rotary cutters and planing-tools, which imparts to it the form of a gutter with any desired form or depth of trough and of any preferred external configuration, all as hereinafter described.

In the drawing, H denotes the frame of the machine, it being provided with a series, *abcde*, of platforms, arranged in manner and with spaces between them as represented. There are side ledges or guides, *f*, arranged on some of such platforms, the blank or stick being pressed against such ledges while being moved on the platforms. It is so forced up to the guides by a series of pressure-rollers, *g h*, and an adjustable gauge, *i*, the pressure-rollers being carried by levers *kl*, to which weights or springs are to be applied to cause the rollers to bear the stick laterally. There is also an adjustable gauge, *m*, arranged at the front of the machine, and provided with screws *nn* for elevating or depressing it relatively to the bed or platforms of the machine. Near the rear end of the frame is a feed-roller, *I*, and over such roller is a feed-and-pressure roller, *K*, the latter having its shaft *o* supported by a vibratory frame, *L*, provided with a hand-lever, *M*, for elevating and depressing the said frame. In advance of the roller *K* is another such roller, *N*, arranged in a vibratory frame, *O*, provided with a hand-lever, *P*, for effecting the vertical movements of such frame. In front of the said roller *K* is a rotary cutter-stock, *R*, provided with cutters *o'*, for forming the hollow *G* (see Fig. 5) of the gutter. The shaft *p* of the said cutter-stock is sup-

ported in an inclined frame, *S*, arranged to slide up and down in suitable guides and provided with an operative lever, *T*², properly applied to it and the main frame *H* and arranged as represented. There extends upward from the frame *H*, in manner as shown, and through the upper girt *v* of the frame *S*, a stationary screw, *r*, furnished with a nut, *s*, the latter serving as a stop to arrest the frame *S* in its upward movement. Another cutter-frame, *T*, applied to a stationary inclined frame, *U*, (fixed on the frame *H*, as represented,) so as to be capable of being moved up and down against it, has a screw, *V*, applied to it and the frame *U*, such being so as to change the attitude of the frame *T* as may be required. The frame *T* supports the shaft *t* of a rotary cutter-stock, *W*, which is furnished with cutters *u u* to form the surfaces *D E*. (See Fig. 5.) Furthermore, there are rotary cutter-heads, *X Y*, arranged as represented, they being fixed on the upper parts of vertical shafts *v v*, and provided with cutters for dressing the stick, so as to form the sides or parts *C F*, as shown in Fig. 5. In advance of these cutter-heads *X Y* there is a horizontal rotary cutter-head or cylinder, *z*, arranged as shown, its purpose being to dress the stick so as to form the plane surfaces *A B*. (See Fig. 5.) The main shaft of the machine is shown at *A'* as provided with a main driving-pulley, *B'*, and also with other or auxiliary pulleys, *C' D' E'*, arranged as set forth. From the pulley *C'* an endless belt, *a'*, leads to and imparts motion to a pulley, *F'*, on a shaft, *G'*, arranged at the rear part of the frame. Three other pulleys, *H' I' K'*, are fixed on the shaft *G'*. From the pulley *H'* a belt, *L'*, passes to and around a pulley, *M'*, fixed on the shaft *t* of the cutter-stock *W*. So, from the pulley *I'* an endless belt, *N'*, passes to and around a pulley fixed on the shaft *p* of the cutter-stock *R*; and from the pulley *K'* a belt, *K*², extends to and gives motion to a pulley, *L*², fixed on a shaft, *M*², arranged at the front end of the frame *H*. The shaft *M*² carries two pulleys, *N*² *O'*, from which belts *P' Q' R'* proceed to pulleys on the shafts of the cutter-cylinder *Z* and rotary cutter-heads *X Y*. There is a wheel, *S'*, fixed on the shaft of the upper feed-roller, the periphery of the said wheel resting against that of an elastic roller or pulley, *T'*, fixed on a shaft, *U'*, provided with a driving-pulley, *V'*, from which a belt, *W'*, extends to the pulley *D'* on the main driving-shaft *A'*. A crossed

belt, X', extends from the pulley E' of the shaft A' to a pulley, Y', arranged upon a stationary journal, *x*, and provided with an elastic pulley, *y*, to work against the periphery of a wheel or pulley, *z'*, fixed on the shaft of the lower feed-roller.

From the above it will be seen that when the main driving-shaft is put in revolution rotary motions will be imparted to the feed-rollers and also to the several cutter-stocks or heads, which, as the stick is impelled through the machine, will reduce it to the form required.

In using the machine, the front end of the stock to be reduced is to be entered between the feed-rollers, by which it will be seized, the stick being advanced or impelled through the machine by their action upon it. In going through the said machine the stick will be formed and grooved to the shape required, a transverse section of it being given in Fig. 5. The cutter-cylinder for forming the hollow G can be brought into action on the stick immediately after the front end of it may have passed by the cylinder, and just previous to the passage of the rear end of the stick by the said cutter-cylinder it may be depressed out of action on the stick, the same causing the groove of the gutter to be formed with stopped

ends. The said groove may be plowed to any desirable depth and may be made deeper in one part than another, as occasion may require, to impart to it the proper slant or inclinations.

I make no claim to the mere combination of a bed, feed-and-pressure rollers, lateral guides, and a cutter-cylinder, as used in common planing-machines for planing a board or in machines for making a molding.

What I claim as my invention is—

The gutter-machine hereinbefore described, the same consisting of the series of platforms *a b c d e*, the guide *f*, the pressure-rollers *g h*, adjustable gauge *m*, the feed-and-pressure rollers I K N, the rotary cutter-stock R with its adjustable frame S, rotary cutter-stock W with its adjustable frame T, the cutter-heads X Y, and the cylinder Z, all the cutter-heads or cylinders being provided with cutters, and the whole being constructed and combined together and applied to the frame H, substantially in manner and so as to operate as and for the purpose specified.

ALBION K. P. BUFFUM.

Witnesses:

R. H. EDDY,
J. R. SNOW.